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ABSTRACT

A sampling of the literature on reading objectives shows a weak sense of direction beyond elementary school. After assessing the problem, the Bureau of Language Arts of the Chicago Board of Education selected inference as the focus of high school reading. To develop a taxonomy of inferences, the Chicago committee began inductively, by writing or selecting passages or stories which its members intuited as being increasingly difficult and appropriate for the various years in high school. The texts chosen were progressively more difficult in terms of the inferences required to comprehend them. In subsequent pilot testing, items that proved difficult included inferences involving judgment or emphasis; questions involving discrimination between related motives or characteristics; inferences of part/whole relations; and questions about the climax of the story, about the relation of setting to plot, and about the function of an incident. However, it was believed that as the fiction reading objectives came to be the more consistent focus of teaching, the Chicago schools would see a marked improvement in reading comprehension. Too, inferential reasoning would at least be one of the instructional emphases in Chicago's high school English courses. (HOD)

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# Defining and Testing High School Reading Objectives

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## Defining and Testing High School Reading Objectives

In October of 1978, the Bureau of Language Arts of the Chicago Board of Education decided to establish a set of minimum language arts objectives for Chicago's high schools, and to create criterion referenced tests addressing these objectives. This paper constitutes a preliminary report on the reading/literature component of this project, with special reference to its fiction strand.

It should not be thought that the Bureau of Language Arts had never before considered its high school English curriculum. In the general area of reading, there existed several studies skills guides and a guide for an ambitious freshman English course, as well as guides for a number of sophomore-senior literature courses on various topics or authors. However, the objectives set forth in the guides tended to be subject-matter oriented, and even when directed at skills, as in the study skills guide, failed to establish a clear progression from freshman to senior years.

The guides can hardly be blamed for these deficiencies: a sampling of the literature on reading objectives shows, in general, a weak sense of direction beyond elementary school. While descriptions of high school reading objectives exist, the objectives are not so clearly defined as to distinguish them from elementary school objectives, on the one hand, or from college English objectives, on the other. And when one looks beyond individual objectives for a program or four year scale of goals, one finds almost nothing.

Consider, for example, some objectives from a representative guide to high school reading (Flanagan et al 1971). These include "summarize a given paragraph, showing that you understand the main idea," "analyze a document, inferring point of view, intended audience, and purpose" (this is a "study skill"), and "given a selection of poetry, differentiate between those expressing sentiment and those expressing sentimentality." The first objective is clearly

important as a measure of comprehension. However, it is listed in most compilations of upper elementary language arts objectives, and may be taught in college freshman English courses as well. As an objective, it has little meaning without further specification: how "difficult" should the paragraph be, and what constitutes "difficulty," in this context? Is a paragraph difficult if it has long words and sentences? If it has an unfamiliar subject matter? If it is poorly written? If its structure is inexplicit? This guide does not consider such matters, a fact which vitiates not only the usefulness of this objective, but that of many others, including the second one quoted above, "analyze a document." As to the third objective, about sentiment and sentimentality, here the high school student is asked to adjudicate a matter unsettled by literary critics to this day.

Another representative guide to high school reading (Dechant 1973) offers us a "typical" list of comprehension skills for high school. Some, such as "associate experiences and meanings with graphic symbols," "react to sensory images," "understand words in context," and "detect and understand main ideas," would seem to apply equally well to lower elementary school, for lack of the specification already discussed. Some. such as "identify antecedents of pronouns," seem almost irremediably elementary school objectives, while others extend into graduate school ("make inferences and draw conclusions, supply implied details, and evaluate what is read"). Some are exceedingly vague ("answer questions about a printed passage"), while others do not seem to be comprehension skills at all ("retain ideas"), though clearly, at least short term memory is essential in reading.

Certainly it is neither kind nor just to single out these publications for special blame. Their authors are struggling through an undefined field, and I cite their efforts as representative, by way of illustrating the problems faced by any person or group attempting to establish objectives for a given school system. Tanner's 1971 criticism still applies: he decried "the almost nonexist-

ent place of a reading program integral to the English curriculum," and complained that "to this day there is no generally agreed upon body of content and sequence ...for the English curriculum in the secondary school" (Tanner 1971).

One possible source of a structural model for reading comprehension objectives is Bloom's taxonomy of mental operations, and several authors have used it to classify reading objectives and to arrange them in a hierarchical sequence. It will be recalled that Bloom distinguishes between lower and higher mental processes, producing six major categories, such that each category after the first uses the skills of all the categories below it in a new constellation for a more complex task. The categories, briefly, are recall, comprehension (translation, interpretation, and extrapolation), application, analysis, synthesis, and evaluation (Bloom et al 1956, 1971). Unfortunately, these categories do not prove very useful for structuring a reading program.

To begin with, as Bloom himself may recognize, the categories of translation, interpretation, and extrapolation, or comprehension, are unserviceably broad. On the one hand, a comprehension task might be to translate a line on a graph into a statement, or to paraphrase a sentence; on the other, it might be to write an interpretation of a novel. One source gives, as an example of a comprehension objective, "recognize literary symbols and explain their symbolic meanings" (Flanagan et al 1971), while another gives "interpreting ideas" or "classifying convergently and divergently" (Burmeister 1974). Without specific context, it is hard to discuss these examples. However, in general, it would seem that the first step in comprehending a literary symbol is to recognize that a given object or action is meant to be symbolic, and therefore needs interpretation. If the symbol is not, like the cross, in common use, or if, like roses or water, it may have a number of conflicting meanings, the reader must proceed to consider the total context to interpret the symbol. These operations should, at the very least, be classified as analysis, rather than as the second in the hierarchy of

mental processes. If by "interpreting ideas" is meant paraphrasing explicit statements, then it would seem, indeed, to be translation, but if it is taken to involve inferring an underlying idea or finding a general principle and explaining its relations to other ideas in the work being read or in the cultural environment, then "interpreting ideas" may become an act or synthesis.

The same argument of overgenerality applies to the category of "application." In a sense, all reading comprehension is application: it is the application of systems of decoding to new situations (texts), involving recall of vocabulary and the use of concepts such as "main idea." How, in the context of reading, can we distinguish application from other mental processes? The examples from our sample texts are "summarize a given paragraph showing that you understand the main idea" and the objective involving sentimentality. Yet summarizing would seem to be an activity involving analysis and synthesis, whereas sentimentality is a matter of evaluation.

When we come to analysis and symthesis themselves, we see a surprising reversal. The examples of analysis in one source include separating a statement into its component parts, and distinguishing fact from opinion; its examples of synthesis include word formation. Granted that these activities do involve analysis and symthesis, it follows that these higher mental processes are much simpler than the lower processes of interpretation and application, and indeed, may be involved in them. The principle of successive inclusion which underlies the taxonomy is denied, and the hierarchy is in disarray. (I have not mentioned the category of recall, because, as the foregoing discussion shows, if only incidentally, few comprehension tasks involve nothing more than recall. Comprehension <u>per se</u>, as opposed to decoding, really begins with translation and application.)

Bloom may well disagree with any of the attempts to use his categories to order reading objectives, but he must see that something is lacking in the definitions of categories that can be given such divergent interpretations by

serious students of reading and curriculum. Clearly, the problem of the hierarchy, like that of locating high school reading objectives, is related to context. The categories in the hierarchy, like the objectives in most collections, have meaning only when the texts to which they are to apply are defined. But we lack a generally accepted description of difficulty in texts to which we might turn for such definitions. The various readability indices are not the answer. They define difficulty in terms of word length and sentence length, or word familiarity, and these dimensions have very little to do with reading comprehension. The difficulty of a passage is much more likely to be related to its syntax, its structure, the degree of explicitness in the connections among its thoughts, the familiarity of its cultural context, and the amount of irony or metaphor it contains. Some of these dimensions are now being studied by cognitive psychologists (Stein 1978, Meyer 1975, Thorndyke 1977, Paris 1975), and the results are most interesting and suggestive, but there remains a gap between the findings of such psychologists and a coherent set of high school reading objectives.

There have, of course, been a number of valuable efforts to create complete high school English programs, or programs for grades 7-9: examples are the Oregon curriculum and the Gateway series. However, neither of these, nor others known to us, met our specific needs: we were looking for minimal common objectives and standards that could be embodied in a variety of courses, without imposing a uniform selection of texts on our very diverse high school English departments.

Unfortunately, it is not possible to report that we have attained this goal and produced an exemplary set of objectives. However, we have made a beginning, the value of which can be assessed by the magnitude of the problem itself. This beginning consists in selecting inference as the focus of high school reading.

There is a growing body of evidence to suggest that inference is the key process in reading comprehension, especially in the comprehension of connected

discourse, as opposed to that of isolated sentences (Goetz 1977, Kavale and Schreiner 1979). This kind of inference is the process of adding to a text information it does not state explicitly, but which completes the meaning of what it does state. A simple example comes from the following snetences. "Mary felt cold. She got up and closed the window." Literally, we are not told why Mary closed the window, but if we are to understand these two sentences at all well, we must infer that cold air was coming in through the window, and that Mary knew she would feel warmer if that cold air were cut off. Or consider a more difficult example:"Mary read John's letter. Suddenly, she felt cold. She got up and closed the window." Here we must infer either what we had to infer before, or, more probably, that John's letter contained some news to which Mary reacted emotionally, so that she felt cold, and, misunderstanding the cause of her feeling, closed the window, thinking that cold air was coming in. Having closed the window, she will still feel cold. These examples remind one how pervasive inference is in reading comprehension. We base these inferences on observed regularities in life, but also on observed regularities in literature (the sympathetic heroine will not really have stolen the diamonds). The inferences may be needed to comprehend a sentence, or two sentences together, or to comprehend such complex, but essential, matters as the focus of a story (who is the principal character?) or of an article (what is the main problem?). Facilitating the ability to make these longer-range inferences would seem to be a proper goal of high school reading programs.

Many of the objectives given in works on high school reading do relate to inference, as we difine it. While finding the antecedent of a pronoun is not infernece, by our definition, unless the sentence is ambiguous, finding the main idea is usually a matter of inference (unless the author says, "My main point is..."), and is especially difficult when there are no topic sentences. Similarly, stating the purpose of a document usually is a matter of inference, as is finding supporting details, and the like. However, though adopting the criterion

of complex inference does help eliminate certain possible objectives, it does not solve the problem of specification already described, that is, the problem of describing the difficulty of the material on which the skill named by the objective is to be performed.

Lacking a taxonomy of inferences, the Chicago committee charged with reformulating objectives decided to begin inductively, by writing or selecting passages or stories which its members intuited as being increasingly difficult, and appropriate for the various years in high school. In this matter, the committee was assisted by its writ, which was, in part, to create a series of criterion referenced tests to monitor achievement of the objectives. Thinking in terms of possible tests was a great help in specifying levels of difficulty for the various comprehension objectives. By choosing suitable texts and writing an increasingly broad range of questions on these texts, the committee was able to apecify its objectives with some precision. It should be understood that the texts are not to be studied in class, and that the tests are open book. In other words, the tests and objectives have nothing to do with recall of any literary works, but set forth comprehension skills to be demonstrated on "unseen" texts of a given level of difficulty.

The texts that the committee chose are progressively more difficult in terms of the inferences required to comprehend them. The short story strand makes this clear. The accounts the four stories give of what happened and why are less and less explicit, and the action itself moves from the physical to the mental plane. Atmosphere, then tone, and finally ideas become factors that must be inferred to understand the stories at all well. In conncection with tone and ideas, irony is presnet and symbols or symbolic events begin to appear. Thus the stories differ both in degree and breadth of inference, where by "degree of inference" is meant the extent to which the inferences are supported by explicit evidence, and by "breadth of inference" is meant the range of matters (setting, motive, tone, ideas) about which inferences must be made. One might think of "degree of infer-

ence" as related to the number of intervening statements the reader must supply to get from one given to another. The two examples about Mary and the window would, in this sense, involve different degrees of inference.

Respects in which the set stories do not differ may be almost as interesting as respects in which they differ. The stories are not significantly different in length. They do not differ progressively in readability: by the Fry index, they range between fifth and weventh grade levels, the senior story, "The Wall" by Jean Paul Sartre, testing out as suitable for sixth grade. (So much for readability as an indicator of difficulty in high school level comprehension.) Finally, the stories do not differ progressively in familiarity of situation: the committee was looking for stories of high interest, rather than for "relevant" or known scenes. Theoretically, it should be harder to infer with unfamiliar material, but familiarity may need a new index, as well. Our sophomore story, which takes place on Mars, proved "easier" than our junior story, about a love triangle among urban teenagers.

This description of the set stories suggests how they helped to specify our fiction reading objectives, and what those objectives were (see appendix for examples). Using the traditional categories of setting, plot, theme, and the like, the test questions probe for degree and breadth of inference. For example, a freshman plot question asks students to put four important incidents in their correct order, whereas a senior plot question refers to an unexplained final response of the protagonist (he laughs) and asks how this response relates to the plot as a whole. Again, a freshman setting question asks where the story takes place, while a senior setting question asks for the thematic (symbolic) significance of the setting.

The tests containing these questions are now being piloted in all Chicago's high schools. Preliminary field testing in a sample of classrooms in 1979 offered some evidence that at present, reading comprehension does not increase with years in high school, a finding also suggested, some years ago, by a high

school administration of the Iowa Test of Basic Skills, routinely given in Chicago to elementary school pupils. Of the items on the two forms of the freshman test (64 in all), 84% were answered correctly by at least half the students. The comparable figures for the sophomore and junior years are 74% and 44%. The figure rises to 68% for the senior test, but this rise may be explained by the inclusion of honor students in the sample of seniors. The declining figures are what one would expect if, in fact, the objectives and tests increase in difficulty over the years, without a comparable increase in the level of student preparation. In the early testing, we gathered no information on individual student scores; the figures apply to items, rather than students.

Looking at the items most often missed, one finds recurrent patterns. All the items in the junior and senior tests which asked students to identify tone, to interpret ironic statements, or to assign symbolic meaning proved difficult. The recurrent question about point of view was poorly answered in each test, although it carries the definition of point of view in its stem, and thus does not depend on recall of the concept. The inferences involving judgment or emphasis proved difficult: examples are questions about the "main conflict" in the story, questions beginning "most of the story is about..." and questions about an incident's main revelation or a character's main motive. Similarly, questions involving discrimination between related motives or characteristics were poorly answered: students found it hard to tell whether a character was self-confident or given to insecure bluster, whether humans came to Mars to explore or colonize it, whether Martian civilization was to be admired or regarded with indifference, which characters were most similar in temperament (a matter vital to understanding the plot of the junior story), which characters were most similar in outlook (a key to the ideas in Sartre's story). Inferences of part/whole relations or structure also proved difficult. Questions about the climax of the story, about the relation of setting to plot, about the function of an incident all were poorly answered.

If one considers what these difficult inferences have in common, one sees that they are all either inferences based on evidence presented throughout the story as a whole, or over long stretches of it, or inferences based on no explicit statements at all. Seemingly very simple questions, such as "what is the time span of the events in the story?" or "why didn't Nancy invite Larry home?" or "why did Pablo tell Tom the joke?" become very difficult when there are no explicit cures, or when the cues are spread over many pages of the story. Nevertheless, these are not esoteric questions, for all their difficulty; they are important to the understanding of the stories. The committee rejected all questions about which there were differences of opinion, as sometimes might arise with respect to questions about the climax of a story, the motivation of its characters, or the tone of its narration.

Already during the current pilot testing, teachers are telling us that the tests reveal unsuspected weaknesses in their classes' reading comprehension. Naturally, the blame is sometimes laid on the test, and we do hope to improve many of the items. However, the Bureau of Language Arts believes that as the fiction reading objectives--and indeed, all the reading objectives--come to be the more consistent focus of teaching, Chicago will see a marked improvement in reading comprehension. It will not have escaped the reader that in emphasizing inference we are saying that reading and reasoning are closely related. It seems likely that at least one of the instructional emphases in Chicago's high school English courses will be on the process of inferential reasoning as such.

## Appendix: Sample Objectives

Given an appropriate story [defined descriptively elsewhere, and by example in the test story] the student will identify

1. the plot line in the story (order and outcome of incidents). Fr.
2. the characters' main motives (explicit and implied). Fr.
3. the major and minor characters and resemblances or parallels among them. Fr.
4. the plot line in the story (order and outcome of incidents, importance or significance of incidents). Soph.
5. the characters' main motives (mostly implied). Soph.
6. the theme. Fr. - Soph.
7. the characters' conscious and unconscious motives, with some regard to character development. Jr.
8. The theme and its relation to a few simple symbols in the story Jr.
9. the tone of the narration. Jr.
10. point of view and its appropriateness. Jr (Fr. -Soph. asked only for point of view.)
11. the plot line in the story (order and outcome of incidents, importance or significance of the incidents, and their relations to the ideas in the story). Sr.
12. major symbols and their meaning. Sr.

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